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May 21, 2010

Mail Stop Appeal
Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

re: U.S. APPLICATION NUMBER: 10/680830
FILING DATE: 07OCT03
NAME OF APPLICANT: Timothy Raymond Cronin
TITLE OF INVENTION: Certified protection from subliminal content for recordings.

Dear Appeal Board:

This is a Supplemental Brief: I do not abandon my utility patent application [hereinafter: my application] nor do I abandon my appeal. This Supplemental Brief is in response to the EXAMINER'S ANSWER (see: Image File Wrapper Document Code [hereinafter just the Codes will be given] APEA; Mail Room Date [hereinafter the documents' Mail Room Dates will be listed right after their respective Document Codes separated only by a semicolon] 04-01-2010.

Preface: The Examiner asserts that the issue of filing date is not appealable and that 08/12/2005 is the filing date for Application Number 10/680,830 (see: APEA; 04-01-2010, p.4, (6), B), 1) and 2)).

Nevertheless, due to my original application having been lost at the USPTO and no response having been given to my letter

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(see: LET.; 11-02-2006) which was in response to the Office of Petitions' Decision on Petition (see: PETDEC; 10-18-2006)

I ask that the Appeal Board find out what happened to my original application and ensure that it is given the correct application date which is October 07, 2003.

My letter in response to that Petition Decision (see: LET.; 11-02-2006) was never responded to even though it contained all required proofs. And even though the "Petition Decision" (see: PETDEC; 10-18-2006; on p.5, lines 12-13) states that "...the petition is dismissed without prejudice to reconsideration." Also, in a later letter to the Examiner (see: A...; 11-04-2008) I state on p.6, lines 26-41:

"Please note that in October 2006 I responded timely to the Decision on Petition by the Office of Petitions (mailed to me October 18, 2006). In that response I asked for reconsideration of that decision. But only much later did I receive any communication from the USPTO. And that communication was a note attached to a refund check which stated "Due To Original Application Was Found." I took that to mean that my patent application of 10/07/2003 was found. I now realize that that may not have been a confirmation of my patent application's original filing date which is 10/07/2003: something I thought I had adequately proven to the USPTO with my communications to the USPTO which included a bank certified copy of the check used for the original filing fee [see: PEFN; 12-23-2005], a copy of the post card sent in my original patent application, and a copy of the USPS "Express Mail" mailing label [see: LET.; 11-02-2006].

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Identification Page

APPLICANT'S NAME: Timothy Raymond Cronin

APPLICATION NUMBER: 10/680830

FILING DATE OF APPLICATION: October 07, 2003 [see above preface, p.2 , lines 4-36].

TITLE OF INVENTION: Certified protection from subliminal content for recordings.

NAME OF EXAMINER: David E. Harvey

ART UNIT OF EXAMINER: 2621 (TC 2600)

TITLE: Supplemental Brief

JURISDICTIONAL STATEMENT: As best as I can determine the Board has jurisdiction under 35 U.S.C. section 134(a), and the time for filing an appeal brief is two months; Bd.R. 41.37(c); (see also: MPEP, 1205.01 Time for Filing Appeal Brief, [R-3] - 1200 Appeal). But I'm not a lawyer.

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Real party in interest

Timothy Raymond Cronin

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Related appeals and interferences

none

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Status of claims

I have only one Claim which is:

Certified verifiable subliminal-free
audio recordings,
recordings containing both audio
and video content, and visual
recordings.

(rejected)

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Status of amendments

none

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Summary of claimed subject matter

Specification Reference (page; line no.)	means	function	Specification Reference (page; line no.)
Step 1)			
p.2; 3, 5-9, 17, 20-22 (p.2, 7-9)	knowledge of absence of subliminal information	verifiably protecting the absence of subliminal	p.3; 15-22
p.3; 1-3, 12-15 p.5; 9-10	in master recordings	information in copies of that master recording	
Step 2)			
p.3; 9-10	certification	certifying the verifiability of subliminal-free content in those copies	p.3; 18-22

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Grounds of rejection to be reviewed on appeal

Whether or not my single Claim is unpatentable under:

- 1) 35 USC 101; based on being directed to non-statutory subject matter
- 2) 35 USC 112-1; based on non-enabling described subject matter in Specification

and 3) 35 USC 102(b); as being anticipated by US Patent number 5,526,125 to Mori et al.

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Argument

Please note: In this argument I will refer to the "Grounds of rejection to be reviewed on appeal" section of this communication.

re: 35 USC Section 101

Errors in grounds of rejection which are addressed below can be summarized as: Appeal Board apparently did not recognize that my application's Claim if implemented would operate to change materials to a particular, different state or thing. And that doing so would require machine-implementation which was not token nor incidental to the transformation of the hard copies of audio recordings, recordings containing both audio and video content, and visual recordings [hereinafter called AV recordings]. Transformation which was specifically limited not just to subliminal-free recordings. Nor transformation just to certified verifiable absence some unspecified quality or thing. But limited even more narrowly to the manufacture of AV recordings which were certified as being verifiably absent so-called subliminals.

Neither did the Appeal Board apparently recognize the potentially very substantial economic beneficial result of implementation of my application's Claim.

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Nor did the Appeal Board recognize that my Claim's language innately sets forth active steps of manipulation and was not a non-functional descriptive recitation of a mere "idea."

Nor did the Appeal Board notice, apparently, that I did not set forth "steps" (see: A...; 11-04-2008, p.4, lines 21-34) that I regarded as comprising the method/process of my invention.

*

The method/process of my application's Claim is deliberately not tied to a particular apparatus. This is not a new argument [hereinafter: (old arg.)]. In my application's Specification [hereinafter: Spec.] (see: SPEC; 08-12-2005; p.2, item 0004)) I state: "...in such a way [emphasis added] as to make it possible for the manufacturer of copies of a recording or recordings to be able to certify...."

But if implemented that process would operate to change materials, specifically hard copies of recordings such as CDs and DVDs, to a particular, different state or thing. That is, as distinct from other potential hard copies of those same recordings, the claimed method/process would apply to those hard copies of recordings effected by it the quality of certified verifiable subliminal-free. And that method/process

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would be applied to known processes of manufacture of physical copies of recordings which are meant to be offered for sale to the general public. (old arg.) In my application's Spec. [Ibid.] on p.2, item 0004), lines 18-21, I state: "... possible for the manufacturer of copies of a recording or recordings to be able to certify that the recording or recordings so produced will be verifiably free of so-called subliminals." And on p.1, in item 0001), lines 20-21, I state: "...adding value to those recordings which cannot be easily copied." And on p.2, item 0003), lines 6-9, I state: "...the recordings offered for sale which are certified to contain only that information which is not meant to pass unnoticed into the subconscious of a person or persons listening to or viewing the recording."

The labeling alone of those effected hard copies of recordings as being certified verifiable subliminal-free would require machine implementation. (old arg.) In my application's Spec. [Ibid.] on p.3, item 0006, lines 12-22, I state: "I perceive that the best method for my invention to be implemented by the recording industry would be for that industry to verify the exact content of information which it intends to make copies of. To protect that information so that no additions can be made to it. Then to securely control the production of

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recorded copies of that information: and to do so in a way that allows manufacturers of those recordings to certify that each copy would be verifiably free of any information which is not overtly and clearly specified as being part of the contents of each copy."

Hand labeling of those recordings by human beings for mass production would produce results which would lack credibility in the marketplace. This is a new argument.

My Claim's method/process if effected operates on and involves the manufacture of hard copies of AV recordings. This is quintessential to, not token nor incidental, to the purpose of my Claim's method/process. If implemented, a new type of product would be produced: AV recordings transformed, by means laid out in the Summary of claimed subject matter (above), into certified verifiable subliminal-free AV recordings. (old arg.) In the Spec. [Ibid.], on p.2, item 0003), lines 9-11, I state: "By offering such certified recordings for sale, the recording industry might increase sales of their products." And on p.2, item 0004, lines 15-21, I state: "Production of audio, or audio and video, or video recordings in a secure production environment and using verified subliminal-free master recordings in such a way as to make it possible for

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the manufacturer of copies of a recording or recordings to be able to certify that the recording or recordings so produced will be verifiably free of so-called subliminals."

My application's Claim's process is not obvious to the recording industry. (old arg.) In my application's Spec. [Ibid.] on p.1, line 22 and on p.2, line 1, in item 0002), I state: I am not aware of a prior art of this type in the recording industry." I also state (see: A...; 11-04-2008, p.4, lines 44-47 and p.5, lines 1-9) that: "No one has ever pursued this approach as far as I can tell...industry and even governmental focus apparently has not contemplated and is not contemplating my discovery's method. Nor the potential benefits of certified verifiably subliminal-free products on the recording industry. What has apparently exclusively been proposed, instead, regarding the issue of theft of intellectual property has been political fixes or technological fixes, alone or in combination. And wherein which the technological fixes have not seemed to envision the concept of incorporating product purity which was intrinsically irreproducible."

The economic prospects of the recording industry have been so much diminished by piracy in recent years that it likely would have otherwise implemented my application's Claim's method/process by now. (old arg.) In part two of my Appeal

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Brief (see: AP.B; 04-24-2009, p.7, lines 32-39) I state:
"...(CD) sales were said to have been declining by 20% per year. And that that deficit in CD sales has not been made up by online sales. Still [emphasis added], the recording industry with its hundreds of billions [should have read: millions] of dollars in sales each year and its many billions [should have read: millions] of dollars of losses each year due to intellectual property theft has not made as far as I can tell certified verifiable subliminal-free recordings available to the public."

While there are many ways to certify and perhaps less but still many ways to verify subliminal-free content of recordings which are meant to be offered for sale, my application's Claim is not an attempt to obtain a patent for a particular means of certification nor of verification. (old arg.) In my letter to the USPTO in the fall of 2008 (see: A...; 11-04-2008; p.2, lines 42 and 43 and p.3, lines 31-36 respectively) I state: "The nature of the certification is not part of my patent application's claim." And, "How an owner could verify as subliminal-free information which that owner did not originate, but wanted to put into masters is not part of my patent application's claim. And, more generally, how those masters came to be subliminal-free, also, is not part of my

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patent application's claim."

Certification and the process of maintaining the ability to verify product purity are taken together in the process/method described in my application's Claim and applied specifically for the manufacture for sale of hard copies of not just any AV recordings, but those which are certified to be verifiably subliminal-free. (old arg.)

In my application's Spec. [Ibid.], on p.2, lines 4-11, I state: "BRIEF SUMMARY OF INVENTION 0003) Certified verifiably subliminal-free audio and video recordings. That is, recordings offered for sale which are certified to contain only that information which is not meant to pass unnoticed into the subconscious of a person or persons listening to or viewing the recording. By offering such certified recordings for sale, the recording industry might increase sales of their products."

My application's Claim does not seek to obtain a patent for the broad concept of subliminal-free AV recordings. Neither does it seek merely and impermissably to attempt to obtain a patent for the concept of "certified verifiable" absence of something. But limits its use of those specific means of implementation not only to the manufacture of hard copies of AV recordings, but to the manufacture of hard copies of

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AV recordings which are specifically those copies which have the quality of being subliminal-free and which are certified as being verifiably so. Here hard copies refers to physical objects each of which contain a copy of the master recording's information, such as music CDs or movie DVDs. (old arg.) In Spec. [Ibid.] on p.3, in item 0006), lines 17-18, I state: "...control the production of recorded copies of that information: and to do so in a way that allows manufacturers of those recordings to certify that each copy would be verifiably free of any information which is not overtly and clearly specified as being part of the contents of each copy."

If implemented by the recording industry my application's Claim's method/process would yield this beneficial result or effect in the so-effected AV recordings: that "...inherent theft-resistant value is added to each copy." (old arg.) (see: Spec. [Ibid.], p.3, line 11. Also, in my application's Specification I state: "This invention differs from other attempts to reduce theft of the intellectual property content of recordings. It does not do this by adding information in either the form of security features or extra-value content to copies of the recordings. But by certifying that copies' content is verifiably free of a

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specific class of information..." (see: Spec. [Ibid.], p.3, item 0005), lines 4-10).

The intent of my application's Claim was never to encompass all means of transmission nor all means of storage of information, but was directed to sales to the mass consumer market of things like pre-recorded tape recordings, music CDs, and movie videos. (old arg.) In my application's Specification under ABSTRACT OF THE DISCLOSURE I state: "...appeal to potential purchasers who care about recordings' quality and who will pay for that quality. All subsequent copies of those recordings would lack that quality; and, consequently, would have lower market value." (see: LET.;09-09-2005, p.5, lines 11-14)

If my application's Claim were implemented by the recording industry the benefit to potential customers would be a whole new class of value added recordings offered for sale. That is those recordings which were certified verifiable subliminal-free. Such implementation would probably help protect intellectual property rights for intellectual content owners, such as recording artists and content providers who own many titles. (old arg.) (see: quotes from ABSTRACT OF THE DISCLOSURE in the immediately preceding paragraph).

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And the manufacture, transport, and marketing of that new class of products could be expected to create new economic activity and consequent jobs. (old arg.) "By offering such certified recordings for sale, the recording industry might increase sales of their products." (see: Spec. [Ibid.], on p.2, item 0003), lines 9-11)

Active steps of manipulation are innate, intrinsic, and inherent to the language of my application's Claim. (old arg.) In my letter to the Examiner dated October 27, 2008 (see: A...; 11-04-2008, p.4, lines 1-3) I state "... Certified verifiably subliminal-free audio and video recordings...offered for sale..." In brief, that is the whole thing -- That's the method." And in that same letter to the Examiner on p.4, lines 17-20 I state "Those steps... [as I note on line 21, a subset of possible implementation methods] are inherent to it."

Note that in THE ABSTRACT OF THE DISCLOSURE I state: "I propose that by certifying specific lack of subliminal content..." (see: LET.; 09-09-2005; p.5, lines 9-10). That part of my application's Specification is not the Claim nor is it the whole Specification. This is a new argument.

Regarding the Examiner's question "...how and/or by what

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means/process the recited recordings are "certified" to be "subliminal-free" in a way that is "verifiable..." (See: APEA; 04-01-2010, p.8, lines 35-37): my application clearly was not an attempt to patent novel or any other types of certification, verification, nor equipment that detected subliminals. (old arg.) (see; SPEC; 08-12-2005, p.1, lines 15-22, p.2 and p.3, & CLM; 08-12-2005, p.4, & LET.; 09-09-2005, p.5)

The SUMMARY OF THE INVENTION of Mori, et al. contains this: "... operating means, such as an edit button switch." (see: Mori, et al., p.4, lines 26-27). Variable means. They weren't trying to obtain a patent for edit button switches. Similarly, I am not trying to obtain a patent for means, of certification, for example. I've detailed that in preceding paragraphs, but relating that fact to variable means as expressed in Mori, et al. is a new argument.

Clearly it is not nor has it been my intention to try to obtain a patent for certification or verification or subliminal detection. But instead for "... recordings offered for sale which are certified to contain only that information which is not meant to pass unnoticed into the subconscious of a person or persons listening to or viewing the recordings." Spec. [Ibid.] on p.2, lines 6-9; that is,

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again, from SPEC; 08-12-2005) (old arg.-as just shown)

The Examiner states that "...the "certified" and "verifiable" recitations, at best, constitute non-functional descriptive material." (see: APEA; 04-01-2010, p.9, lines 17-18). But certification and verification as used in my application are acts tied per se to the physical/material world. And the context of their use in my application allows for no other interpretation of their meaning. This is a new argument.

Finally, the Examiner's Answer includes the statement (see: APEA; 04-01-2010, p.10, lines 32-5) "... applicant appears to have set forth "steps" that he regards as comprising the process/method of his invention. It is noted, however, that those "steps" are not recited in the pending claim...." The Examiner was referring to my communication to the USPTO (see: A..., 11-04-2008, p.4, lines 26-35). But he failed to take into account my statement on lines 17-20 on that same page: "Those steps numbered below for the first time are not the invention nor are they the discovery of my patent application's claim. But they are inherent to it." (old arg.) See: AP.B; 04-24-2009, p.5, lines 16-21, where I state "He takes a section of my response to his non-final rejection out of context (please see: Doc. Code CTFR;

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02-23-2009; p.2, para. 1.B) as if he hadn't noticed that in the several prior lines I state explicitly that what follows was not what he seemed to take it to be. And that's a fact.

Please see: Doc. Code A...; 10-04-2008; p.4, lines 17-20)."

re: 35 USC Section 112-1

Errors in grounds of rejection which are addressed below can be summarized as: Appeal Board apparently not recognizing that the Specification and Claim of my application did not involve detection of subliminals; but, instead, promises to advance the prospects of the recording industry in a specific way that avoids the whole issue of detection of subliminals and of semantic pitfalls regarding their definition. This by means of not adding nor allowing to be added subliminals to known subliminal-free master AV information that was meant to be recorded onto hard copies which would be certified as as being verifiably subliminal-free for sale to mass markets.

Nor does the Appeal Board apparently recognize that my application's Specification contains "...a written description of the invention, and of the manner and process

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of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same. And that it sets forth the best mode contemplated by the inventor of carrying out his invention (see: APEA; 04-01-2010, p.11, lines 3-8).

Nor does the Appeal Board apparently recognize that certification and verifiability as used in my application are both obvious and widely known means/processes not only within the recording industry; but in commerce generally and governments, too, nearly worldwide.

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To some extent the USPTO recognizes the existence of subliminals, or subliminal perception. This is evidenced by Jandel's patent. See: CTNF; 10-14-2008, p.2, lines 1-3, wherein which it is stated: "1. The showing of Jandel (U.S. Patent #6,122,322): A) Jandel has been cited because it evidences that it was known to be desirable to protect an observer from subliminal messages...." This is a new argument.

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Also, in Examiner's Answer to my Appeal Brief (see: APEA; 04-01-2010, p.8, lines 21-22) the word conventional is used when describing subliminal messages. See also same Examiner's Answer, p.8, lines 25-26, where again "conventional forms of subliminal messaging" shows some USPTO familiarity with the concept of subliminals.

And the Examiner questioned my statement that "Subliminals are never undetectable -- Subliminals are by definition detectable by their human observers, although unconsciously." (see: A...; 11-04-2008; p.2, lines 19-21). The Examiner stated in his final rejection of my application that "...the examiner maintains that...subliminal messages are, by definition, messages that are intended to be undetectable...." (see: CTFR; 02-23-2009; p.3, lines 24-25). And it is stated in the Examiner's Answer to my Appeal Brief that: "As currently understood by the Examiner "subliminal messages," by definition refer to a message that is not "consciously" detected by the user." (see: APEA; 04-01-2010; p.6, lines 27-29)

What I meant when I stated "by definition" was this: Messages are information sent from a sender to a receiver. Messages

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not received are intended messages only. This is a new argument. When subliminal messages are perceived by a human being (the receiver) he or she is not consciously aware of having received that information. Therefore, a message which is sent in such a way so as to be perceived by a human being (the intended receiver) yet subconsciously so, if it is not received or if it is consciously perceived, is by definition not a subliminal message. At best it can be called a failed subliminal messaging attempt. This also is a new argument.

Subliminal messages must be detected by a human being and detected subconsciously otherwise they are just messages or attempted messages, but not subliminal messages. If subliminals are absolutely undetectable, and if the Examiner has not meant by his use of "undetectable" (see: CTNF; 10-14-2008; p.2, on lines 29 and 30) simply not consciously perceived by the human being or beings exposed to them, then they are not "subliminal" by definition. Whether or not a specific intended recipient of subliminal messages will perceive them subconsciously is variable with the condition and situation of that person, including the "level" and duration of the intended subliminal signal. This is a new

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argument.

But the issues of what is and what is not a subliminal and whether or not and if so by what means they can be detected are irrelevant to my application's Claim. And the reason those issues are irrelevant is because if implemented that Claim's process/method prevents subliminals from being in the AV recordings it effects. Therefore no subliminal messages exist in the certified verifiable subliminal-free AV recordings. (old arg.) I state in my application' Spec. [Ibid.], on p.2, lines 5-6: "Certified verifiably subliminal -free audio and video recordings."

My utility patent application is not about detecting subliminals. Instead, it is about not putting subliminals into an otherwise subliminal-free recording in the first place and making it possible for purchasers of copies of that recording to be confident that no subliminals were put into those copies. Consequently Jandel simply can not; and, thus, does not anticipate what my application's Claim is about. And so it is not relevant to my application's Claim.

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This is not a new argument. In my letter to the Examiner dated October 27, 2008 (see: A...; 11-04-2008; p.2, lines 5-8) I state: "Jandl's patent isn't about subliminal-free copies of recordings, but subliminal-contaminated or potentially subliminal-contaminated ones. And the detection of that contamination via an electronic sensor system.

My application's method/process avoids the pitfall of having to prove that no undetected subliminal or subliminals remain in copies of AV recordings which were certified as being verifiably subliminal-free: potential subliminals which would negate the verifiability. Thus the practical impossibility of disproving that no undetected subliminals remain in the copies is circumvented by my application's method/process. (old arg.) In my letter to the Examiner dated October 27, 2008 (see: A...; 11-04-2008; p.3, lines 21-24) I state: "While it may be impossible to absolutely verify the absence of something in someone else's work output, one can certify specific limits for a set of information that was originated by its owner...."

This whole issue of detecting subliminals is irrelevant to and obviated by the content of my application in which

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Specification, under the heading DETAILED DESCRIPTION OF THE INVENTION, I state: "Production of audio, or audio and video, or video recordings in a secure production environment and using verified subliminal-free master recordings in such a way as to make it possible for the manufacturer of copies of a recording or recordings to be able to certify that the recording or recordings so produced will be verifiably free of so-called subliminals. That is, free of information included in the recording or recordings which is not meant to be consciously perceptible by the average person who might listen to, listen to and view, or view the recording or recordings." (see: p.2, lines 15-22; p.3, lines 1-3, of my application's Specification)

My application is not about and never was about detecting subliminals. Partly, just not adding any to already uncontaminated AV content. And, yet, more: certifying that recordings of such AV content are subliminal-free. And not only that, but verifiably so. This so as to preclude competitive marketing of AV recordings falsely labeled as being subliminal-free. (old arg.) In my letter to the Examiner dated October 27, 2008 (see: A...; 11-04-2008; p.5, lines 9-14) I state: "To make certified verifiably

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subliminal-free copies, intellectual property thieves would have to identify themselves as thieves via the certification process to establish that their subliminal-free reproductions of that stolen information was truly subliminal-free."

Mathematics would be poorer without the concept of zero. In, I think, an analogous way my application's Claim moves in a fruitful direction for patenting. This is a new argument. And again my Claim is not just about the absence of something, but about ensuring via certification specifically the absence of subliminals in specific products and verifiably keeping that absence of subliminals there right to the point of sale of the recordings. (old arg.) See: CLM; 08-12-2005; p.4, lines 2-6, where I state: "What I claim as my invention is: Certified verifiable subliminal-free audio recordings, recordings containing both audio and video content, and visual recordings."

I used the word protection in the Title of Invention (see: SPEC; 08-12-2005; p.1, line 6). But I clearly did not mean looking for subliminals. (old arg.) I state in my reply to the non-final rejection of my application that "...unlike Jandel's approach, my patent application's claim involves

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a method of making completely subliminal-free copies available for sale to for example the mass market." See: A...; 11-04-2008; p.2, lines 29-31. Please note the use of "making" in the first line on this page after the heading.

And as I stated in my reply to the non-final rejection of my application "Jandel not without reason seems implicitly to presuppose that all subliminally transmitted information would be harmful to an observer of that information, which might not be true in all cases...protection may...refer to control of information an observer receives, which is the principal reason my patent application uses the concept "protection from."" See: A...; 11-04-2008; p.2, lines 11-18.

Finally, in relation to the rejection based on 35 USC 112-1, both certification and verifiability of the absence of something are widely known and obvious methods/processes used in manufacturing environments. (old arg.) In my application's Spec. (see: SPEC; 08-12-2005), on p.2, lines 1-3, I state: "...sellers of consumer products...have long used relative better purity as a selling point for their products."

And in my letter in response to the Examiner's non-final

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rejection of my application (see: A...; 11-04-2008; p.2, lines 43-45) I state: "Certification is widely used in commerce everyday to allow transactions to proceed for matters great and mundane." And in that same document on p.3, lines 42-45 I state: "The owner of information which is intended to be recorded for sale, by not adding subliminals to that information; is, thus, able to verify the absence of subliminals in that information." And on lines 41-42 of that same page I state: "Owning information (e.g. music or images) implies knowing what that information is." And in that same document on p.4, lines 24-25 I mention "...steps leading to non-falsified certification [i.e. verifiability] (from item #0006) [of my application's Spec.] are...." And then I list them:

- 1) "...verify the exact content of information which it the recording industry intends to make copies of."
- 2) "...protect that information so that no additions can be made to it."
- 3) "...securely control the production of recorded copies of that information: and to do so in a way that allows manufacturers of those recordings to certify that each copy would be verifiably free of any information which is not overtly and clearly specified as

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being part of the contents of each copy." (see: A...; 11-04-2008; p.4, lines 26-35) There is nothing therein stated which is difficult to grasp. Nor is it non-obvious as is plain to see.

re: 35 USC Section 102(b)

Errors in grounds of rejection which are addressed below can be summarized as: The Appeal Board apparently not recognizing that Mori et al. clearly did not in any way anticipate my application's Claim nor anything else about it: No certification was mentioned, nor verification, nor subliminal messages, nor making copies for sale, much less a combination of those means/processes to make a new method.

Nor apparently did the Appeal Board recognize the overtly false statement in the Examiner's Answer (see: APEA; 04-01-2010; p.13, lines 31-34 (i.e. the last four lines of P.13)). There it states: "...the user/"manufacturer" of the home "recordings" in Mori et al clearly produced recordings that are certified verifiable, by the user, to be subliminal free."

*

Mori et al. does not in any way anticipate my application's

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Claim nor anything else about my application. Mori et al. doesn't even mention certification, nor does it mention the verification process, nor does it mention subliminal messages (much less subliminals being added to or not added to AV information), Nor even making copies available for sale to the general public. Nor was a secure manufacturing environment mentioned. This is a new argument.

The potential for making home videos implied in Mori et al. even if actualized and even if those home made AV recordings were intended for sale (again, of which no mention was made in Mori et al.), they would probably be offered over the internet electronically where the sender loses the ability to verify information content; and, consequently, the ability to certify that no additions were made to the content of the sent information. But suppose hard copies, say onto CDs, were made by a home user of equipment effected by improvements described by Mori et al. in their patent: at that point there is a total disconnect from the content and from the aims of the Mori et al. patent. Their patent is about an improvement of equipment. And that's all. Tangential extrapolations about activities which were originally connected in some way to in-home use of video equipment could be imagined, but those

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ideas are in no way implied by nor anticipated by Mori et al..
This is a new argument.

Conceivably home made recordings could be verifiably subliminal-free. But certification of such verifiability would be pointless and very unusual if such recordings were not offered for sale or at least distribution. Mori et al. does not anticipate pointless certification of home made video recordings. Mori et al. is about an equipment improvement. It is not about certification, much less pointless certification. This is a new argument.

But see also my letter to the Examiner dated October 27, 2008 (re: A...; 11-04-2008; p.6, lines 6-16) wherein which I state: "Not everything that can be verified as being subliminal-free will be subsequently certified as such. And even if certified as being verifiably subliminal-free will be offered for sale to the general public: there probably are manufacturers of recordings to which the certification trail would be anathema. So I believe Mori et al., does not anticipate my discovery since it implicitly anticipates only a subset of parts of the method which make up my patent application's claim. And which alone, though well

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known, are not the composition of concepts which together form a method new to the recording industry." What that subset is is a possibly "secure" manufacturing environment and possible knowledge of content through origination of the AV information so produced. This, if intended for home use implies home use which might in turn imply that subset.

In the Examiner's Answer (see: APEA; 04-01-2010; p.13, lines 31-34 (i.e. the last four lines of p.13)) it is stated that: "...the user/"manufacturer" of home "recordings" in Mori et al clearly produced recordings that are certified verifiable, by the user, to be subliminal free." This is fantasy: it is simply and overtly not true. To be "implicitly" capable of certifying and verifying (which nevertheless Mori et al does not attain to) (see lines 14 & 15 on that same page) is not the same as having had done it as the Examiner states.

And this was not a lone instance of apparent bias in the Examiner's Answer. On p.9 of that document in paragraph "d)" (see: APEA; 04-01-2010; p.9, lines 19-30) it is stated that: "Even if one were to accept applicant's own interpretation of the instant invention...like applicant's own production

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studio environment...in the same certifiable/verifiable manner...." This again is fantasy — Never did I suggest that I had a production studio. Nor is that issue in any way germane to an analysis of my application by the Appeal Board. What is germane is that my application's Claim is about certified verifiable not "certifiable" verifiable. This is a new argument, except regarding what my application's Claim states.

These errors in the Examiner's Answer (re: APEA; 04-01-2010) seem to evidence a lack of appreciation by the Examiner and the rest of the Appeal Board that the words certified and verifiable as I use those words in my application's Claim mean and refer to acts, and not ideas. This is a new argument.

P.S. to Argument: Assuming that the Examiner was not deliberately placing stumbling blocks or red herrings in his arguments regarding my application seemed to be prudent to me. But by doing so, perhaps the Examiner thought that I was being disrespectful by implying that he may have taken some of his points of rejection which were obviously wrong as being valid. I'm not familiar with patenting process norms along these lines. But no slight of the Examiner was intended.

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Claims appendix

Claim Status:

1 (rejected)

(see enclosed copy of claim)

Specification (contd.)

CLAIM

0007) What I claim as my invention is:

**Certified verifiable subliminal-free
audio recordings,
recordings containing both audio and video content,
and visual recordings.**

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Evidence appendix

Claim support and drawing analysis section

drawings: none

claim support analysis:

see: Argument (pp. 12-38, this communication)

Evidence section

Table of contents for evidence section: none

Evidence:

The following listed U.S. Patent Documents:

Document Number	Date	Name	Classification
US-6-122-322	09-20000	Jandel, Magnus	375/240.13
US-5-526-125	06-1996	Mori et al.	386/52

(see enclosed copies)

Statement of where in record the Examiner entered the evidence:

Image File Wrapper Doc. Code 892, Mail Room Date
10-14-2008.

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Evidence appendix

(cont.)

Means or step plus function analysis section

see: Summary of claimed subject matter; p.10 this
communication.

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Related proceedings appendix

none

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**United States Patent
Jandel****6,122,322****September 19, 2000**

Subliminal message protection

Abstract

The present invention relates to a method and to a system for detecting a first context change between two frames. When a second context change between a further two frames occurs within a predetermined time interval, the frames accommodated within the two context changes are defined as a subliminal message. An alarm is sent to an observer upon detection of a subliminal message.

Inventors: **Jandel; Magnus** (Upplands Vasby, SE)Assignee: **Telefonaktiebolaget LM Ericsson** (Stockholm, SE)Appl. No.: **09/310,739**Filed: **May 13, 1999****Related U.S. Patent Documents**

Application Number	Filing Date	Patent Number	Issue Date
PCTSE9701909	Nov., 1997		

Foreign Application Priority Data

Nov 19, 1996 [SE] 9604241

Current U.S. Class: 375/240.13 ; 348/154; 348/473; 348/699; 348/E5.067;
348/E5.105; 358/908; 375/E7.267

Current International Class: H04N 7/52 (20060101); H04N 5/14 (20060101); H04N 5/445 (20060101); H04N 005/14 (); H04N 009/64 ()

Field of Search: 346/46,94 358/908 348/699,700,473,475,553,154,155

References Cited [Referenced By]

U.S. Patent Documents

<u>5099322</u>	March 1992	Gove
<u>5642174</u>	June 1997	Kazui et al.
<u>5644363</u>	July 1997	Mead
<u>5719643</u>	February 1998	Nakajima
<u>5751378</u>	May 1998	Chen et al.
<u>5801765</u>	September 1999	Gotoh et al.
<u>5929920</u>	October 1999	Sizer, II
<u>5969755</u>	October 1999	Courtney

Foreign Patent Documents

4106246 C1	Mar., 1992	DE
95/06985 A1	Mar., 1995	WO

Primary Examiner: Britton; Howard

Assistant Examiner: Diep; Nhon T

Attorney, Agent or Firm: Nixon & Vanderhye, PC

Parent Case Text

This is a continuation of PCT application Ser. No. PCT/SE97/01909, filed Nov. 13, 1997.

Claims

What is claimed is:

1. A method of distinguishing between messages in a sequence of frames that include image information, the method comprising:

detecting a first context change between a first and a second frame,

detecting a second context change between a third and a fourth frame,

comparing the time period between the first and the second context changes with a first threshold value, and

indicating said message in dependence on said comparison.

2. A method according to claim 1, characterized in that relevant data related to the first and second context changes and data relating to the source of the frame sequence are stored in a memory.

3. A method according to claim 1, characterized in that a second message is indicated in dependence on whether a third context change between said first and said fourth frame is detected.

4. A method according to claim 1, characterized in that said first context change is detected by measuring the energy difference between said first and said second frames.

5. A method according to claim 1, characterized in that said second context change is detected by measuring the energy difference between said second and said third frames.
6. A method according to claim 4, characterized in that the energy is measured by calculating, for each frame point, the difference between the value of a frame point in a first frame and the value of the corresponding frame point in a second frame, calculating the square of the calculated difference, and forming the sum of the calculated square values for all frame points.
7. A method according to claim 1, characterized in that said first context change is detected by measuring the energy in a first displaced frame difference (DFD), and using the measured energy to calculate the second frame from the first frame.
8. A method according to claim 1, characterized in that said second context change is detected by measuring the energy in a second displaced frame difference (DFD), and using the measured energy to calculate the fourth frame from the third frame.
9. A method according to claim 7, characterized by comparing the energy in the displaced frame difference with a second threshold value, and indicating a context change in dependence on said comparison.
10. A method according to claim 8, characterized by comparing the energy in the displaced frame difference with a second threshold value, and indicating a context change in dependence on said comparison.
11. A method according to claim 7, characterized in that the energy in the displaced frame difference (DFD) is measured by calculating the square of the value in each frame point in the displaced frame difference and forming the sum of the calculated values for all frame points.
12. A method according to claim 7, characterized in that the energy in the displaced frame difference (DFD) is measured by calculating the absolute magnitude of the value in each frame point in the displaced frame difference and forming the sum of the calculated values for all frame points.
13. A method according to claim 1, characterized in that the first context change is indicated when an I-frame in an MPEG-stream is detected.
14. A method according to claim 1, characterized in that the second context change is indicated when an I-frame in an MPEG-stream is detected.
15. A method according to claim 1, characterized by comparing the second frame with a fifth frame stored in a frame library, and indicating the first message in dependence on said comparison.
16. A method according to claim 2, characterized by storing in said memory the frame sequence between the first and the second context change.
17. A method according to claim 2, characterized in that a user is able to examine the contents of said memory.
18. A method according to claim 1, characterized in that said second frame and said third frame are one and the same frame.

19. A system for automatically detecting subliminal messages in a frame sequence, the system comprising:

means for measuring context changes between two frames in the frame sequence; means for initiating an alarm; means for storing a frame sequence; means for calculating a time difference between two context changes; means for comparing a measured time difference with a threshold value; and means for initiating an alarm in response to the outcome of said means for comparing.

Description

The present invention relates to a system and to a method for protecting an observer from subliminal messages.

BACKGROUND OF THE INVENTION

Subliminal messages are messages that are sent in a manner such as to be undetectable consciously by an observer. Subliminal messages are hidden suggestions that can only be perceived by the subconscious. In video communication, a subliminal message can be flashed so quickly that the viewer will not be aware of having seen the message. The viewer can, nevertheless, be influenced by the message content. Consider, for instance, the case of a subliminal advertisement that is sent while the viewer is studying the latest televised news from the stock market. The advertisement may inform the viewer that ACME chocolate is good to eat, but is flashed so quickly that the viewer is unaware that he/she has been subjected to an advertisement. Some viewers, however, can be influenced subconsciously by the advertisement, and later feel an unexplainable longing for ACME chocolate.

The ground-based transmission of television channels are subject to ethical and legal constraints that are aimed towards preventing the above type of advertising. However, it is not possible to guarantee the prevention of the transmission of subliminal messages in many of the international satellite-based television channels that do not obey local laws and regulations. The protection of an observer from such messages is more difficult to achieve in modern types of communications, such as Internet and videotelephony, for instance. Subliminal messages can be hidden not only in a video sequence, but also in still images, or what the observer considers to be still images, and also in audio sequences.

Two mutually sequential images of an image sequence are seldom exactly the same. The fundamental concept of mediating movement with the aid of a plurality of mutually sequential images is that each image will differ slightly from the preceding image. When the images are shown at speed, this is perceived by the eye as a movement and not as a presentation of individual images, by virtue of the eye having a certain degree of inertia. In the majority of cases, only a small part of the image frame is involved in the actual movement; compare a walking person against a stationary background in this regard. This feature is used for different types of image sequence compression, such as MPEG2, for instance. MPEG2 saves space in the image sequence, by sending, among other things, approximative information that describes those pixels that change. However, this results in the introduction of errors in the image sequence, making it necessary to synchronise the image at regular intervals. This is achieved with a so-called I-image that contains all information necessary to compile a complete image.

Image sequences also include a row of different frames in order to enable a moving image to be transmitted in the most effective manner possible. A frame contains image information that is presented on a medium, possibly together with further frames, to form an image or picture. For instance, an interlaced image is comprised of two frames. The term frame will be used consistently throughout the

following description. By frame is meant information that is used to compile an image. A frame can itself include a complete image, or solely parts of an image, or information from which an image can be calculated. An I-frame is a complete frame that includes image information. Because an I-frame contains a great deal of information, it is expensive to transfer. A new P-frame can be formed from an I-frame or from a P-frame. A P-frame, (prediction frame) is formed by transferring to the receiver side movement vectors and DFD (Displaced Frame Difference) related to the preceding frame. The movement vectors describe how objects in the preceding frame shall be moved to form the P-frame. When the new P-frame is formed, errors will occur due to rounding-up, for instance. DFD describes how the calculated P-frame differs from the original image. The difference between the values of each pixel in the calculated frame and in the original frame can be calculated with regard to black-white frames. A colour frame that uses RGB (Red, Green, Blue) can be transformed to a form in which one portion consists of a luminance part. The luminance part can be used to calculate the DFD, in this case. A P-frame is more cost-effective than an I-frame, since movement vectors plus DFD contain much less information than a corresponding I-frame would contain. Also included are B-frames which are calculated from preceding and succeeding P-frames.

The expression subliminal message is also used to describe a code where a number of encrypted messages are encoded within the same set of symbols. This has no relationship at all with the present invention.

Described in U.S. Pat. No. 5,151,788 is a system for identifying and eliminating advertisements in and from a video signal, by detecting blank images. The concept of this solution cannot be applied to subliminal messages, because subliminal messages are not normally preceded by a blank image.

Described in FR 2,622,077 is a system for detecting discontinuities between images, by analyzing an analogue video signal line-by-line. The concept is not applicable to the present invention, since subliminal messages do not differ from other signals when considered line-by-line.

SUMMARY OF THE INVENTION

The present invention addresses the aforesaid problems, by detecting subliminal messages and warning an observer of their presence.

The object of the present invention is thus to protect an observer against subliminal messages.

The aforesaid problems are solved by the present invention, by detecting subliminal messages and warning an observer of their presence, by detecting a context change between two frames.

More specifically, there is detected a first context change between two frames. When a second context change occurs between a further two frames within a predetermined time period, the frames accommodated within the two context changes are defined as an subliminal message. When a subliminal message has been detected, an alarm is sent to an observer.

A context change can be defined as a major change in the content of a frame; c.f. a scene change, for instance.

A frame point can be defined as a value in a point in an image that together with other frame points compiles said image.

The present invention provides the advantage of enabling subliminal messages to be detected and stored for later analysis.

Another advantage is that an observer can be protected against and warned of the presence of subliminal messages.

The invention will now be described in more detail with reference to preferred embodiments thereof and also with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an overview of one embodiment according to the invention.

FIG. 2 is a flowchart illustrating one embodiment of the invention.

FIG. 3 is a flowchart illustrating another embodiment of the invention.

FIG. 4 is a flowchart illustrating the detection of a context change in accordance with one embodiment of the invention.

FIG. 5 is a flowchart illustrating the detection of a context change according to another embodiment of the invention.

FIG. 6 is a flowchart illustrating the detection of a context change in accordance with still another embodiment of the invention.

FIG. 7 is a flowchart illustrating the detection of a subliminal message.

FIG. 8 illustrates a subliminal protection module.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

FIG. 1 is an overview of one embodiment of the invention. Reference numeral 101 identifies an observer or viewer watching a film on a television 102. Although the term film and television are used in describing this embodiment, it will be understood that equivalent terms can be used instead, for instance such terms as MPEG-sequence and data terminal. The reference numeral 111 identifies a frame sequence sent to the television 102 from a source 110. The sequence of frames 111 arrives at the television 102 via an SMP-module 112 (Subliminal Message Protection). The SMP-module may alternatively be integrated with the video decoder. The source 110 may, for instance, be a cable-TV distributor, an SP (Service Provider) or a computer connected to Internet or Intranet. FIG. 1 shows part of a frame sequence 111, where reference 103 identifies a frame in the normal sequence. Reference 104 also identifies a frame in the normal sequence, although in the illustrated case the frame 104 constitutes the last frame that occurs in the normal sequence prior to the occurrence of a context change 105. A context change can be defined as a major change in the content of a frame; c.f. a scene change for instance. The context change 105 is followed by a series of frames which together constitute a subliminal message 106. The subliminal message 106 may be comprised of solely one frame or of several mutually sequential frames. Reference 107 identifies a context change which terminates the subliminal message and the normal frame sequence reappears. Reference 108 identifies the first frame in the normal frame sequence, while reference 109 identifies the next following frame. The SMP-module 112 detects the context changes 105 and 107. As soon as the context changes 105 and 107 occur within a specified time interval, an alarm is generated and the subliminal message 106 is stored and can be played back by the observer 101.

FIG. 2 is a flowchart illustrating one embodiment of the invention. Reference 205 identifies a frame sequence. Reference CC1 identifies a context change between the normal frame sequence N and those frames that constitute the subliminal message S. Reference CC2 identifies a context change between the subliminal message S and the normal frame sequence N. Each frame that arrives at an SMP-module (not shown) is compared with the last frame to arrive, and context changes are detected, in accordance with box 201. The time at which the two latest context changes occurred is saved. The time difference between the latest two context changes to take place is calculated in accordance with box 202. When the time difference is smaller than a threshold value T_s , a user alarm 203 is triggered and the image frozen, in accordance with box 204. The observer is then able to ascertain whether or not he/she has been subjected to a subliminal message and, if so, the nature of the message.

FIG. 3 is a flowchart illustrating another embodiment of the invention. Reference 301 identifies a frame sequence arriving at an SMP-module (not shown). Reference CC1 identifies a context change in the frame sequence. Reference N1 identifies the last frame in the normal frame sequence, while reference S1 identifies the first frame in the subliminal message. Reference S2 identifies the last frame in the subliminal message and reference CC2 identifies a context change between S2 and N2, where N2 identifies the first frame in the normal sequence after the context change CC2. The SMP-module (not shown) functions to detect context changes, and the time at which these changes occur is saved together with the frames N1, N2, S1 and S2, in accordance with box 302. If the time difference between the latest two context changes CC1 and CC2 is smaller than a given threshold value T_s , box 303, a preliminary alarm is triggered and relevant data logged, e.g. the subliminal message source, the message arrival time, and so on, in accordance with box 304. A test is then run to ascertain whether or not a context change exists between frames N1 and N2. If no context change exists between said frames, an alarm is triggered (box 306) and the frame sequence frozen (box 307). The observer is now able to evaluate consciously the context change that has occurred, through the medium of the frozen frames and the logging activity that has ensued.

Those occasions on which the entire frame has been drastically changed, such as in the case of a scene change, can be mediated with an I-frame in the frame sequence. When the transmission of a subliminal message is commenced, there will occur a scene change that causes a major part of the frame to be changed between two mutually sequential frames. Thus, a context change can occur when the receiver receives an I-frame. When two I-frames are received in succession within a short space of time, the transmission of a subliminal message can be suspected.

FIG. 4 is a flowchart that illustrates the detection of changes with the aid of I-frames in an MPEG-sequence. Reference 401 identifies a frame sequence that arrives at an SMP-module (not shown). The SMP-unit receives a frame, box 402, and ascertains whether or not the frame received is an I-frame, box 403. The receipt of an I-frame indicates a context change, box 404.

FIG. 5 is a flowchart that illustrates the detection of a context change, by numerically calculating a value of the change between two frames. The reference 501 identifies a frame sequence arriving at an SMP-unit (not shown). The SMP-unit (not shown) receives a frame N.sub.i, box 502. The frame N.sub.i is stored in a memory L.sub.2. Prior to this, the value of L.sub.2 is stored in a memory L.sub.1, box 503. A value E of the difference between the frames is then calculated, by summing an energy measurement of the difference between corresponding frame points in the frames L.sub.1 and L.sub.2, box 504. This energy measurement may, for instance, be $x.sup.2$, which would give the following formula:

where $I.sub.s$ is the value of the frame point s in the frame L.sub.2, and $I'.sub.s$ is the value of the frame point s in the frame L.sub.1. A context change is indicated when E is greater than a threshold value $T.sub.e$, in accordance with boxes 506 and 506 respectively.

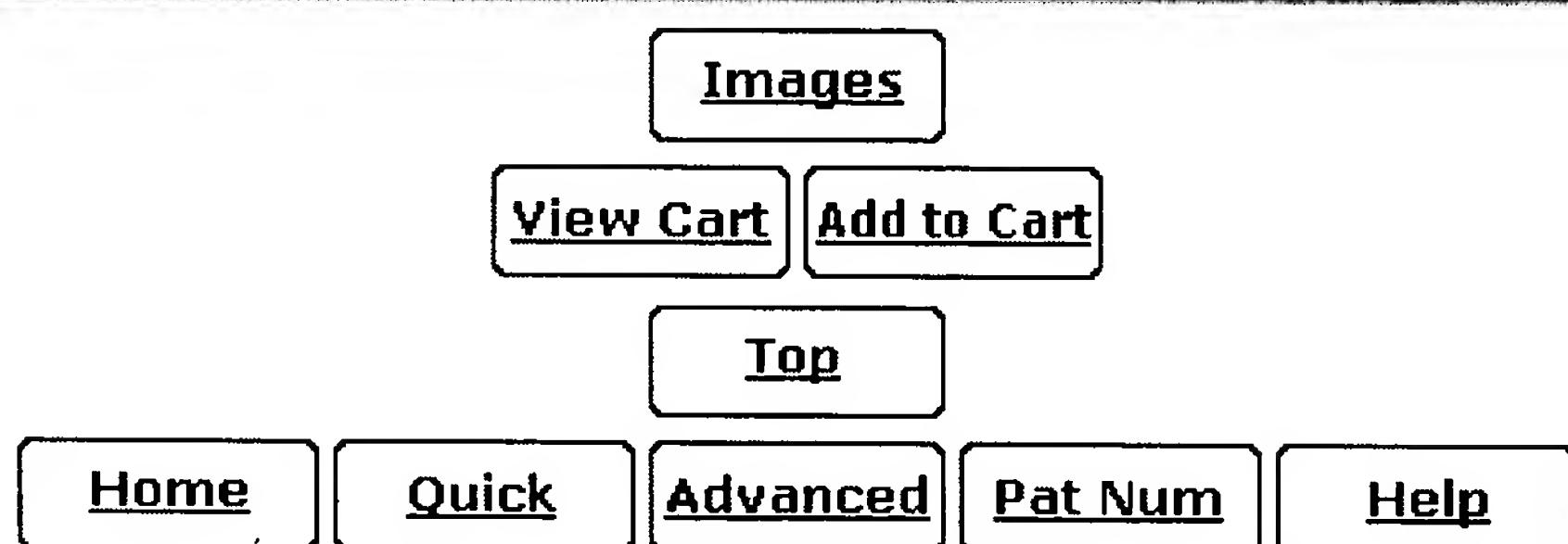
As illustrated in FIG. 6, a context change between two P-frames can be detected in a manner similar to that described above, by measuring the energy in the DFD. In FIG. 6, the reference numeral 601 identifies a frame sequence. The energy is calculated, box 603, for each DFD received, box 602. If the amount of energy contained by the DFD is greater than a threshold value 604, this indicates that a context change has taken place, box 605.

The SMP may include a library function that contains data relating to known subliminal messages, as shown in FIG. 7. The reference numeral 701 identifies a frame sequence. Each frame received, box 707, is compared with the frames stored in the library, box 703, and when sufficient similarity is noted, box 704, a user alarm is triggered, box 705. This comparison may be carried out by filtering each frame, so as to present a number of characteristic features. These characteristic features are then compared with the features stored in the library function. One advantage with this procedure is that computer power and memory space are saved.

FIG. 8 illustrates in greater detail an SMP-module 802 connected to a monitor 801. A frame sequence arrives at the SMP-unit 803. The frames pass a system 807 which functions to detect context changes. The system 807 includes a part 804 whose function is to measure the energy content of a frame, a part whose function is to compare the energy value with a threshold value 808, and a part whose function is to initiate an alarm. The SMP also includes means for storing a stream or sequence of frames 806.

It will be understood that the invention is not restricted to the aforescribed and illustrated exemplifying embodiments thereof, and that modifications can be made within the scope of the following claims.

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(1 of 1)

United States Patent**5,526,125****Mori, et al.****June 11, 1996**

Editing device for sequentially editing desired discrete scenes of respective user-specified durations

Abstract

An editing device for sequentially editing desired scenes or cuts. The editing device includes a CPU 11 which, when triggered by actuation of an edit button switch 12, issues a rewind playback command signal to a video camera 1 for a pre-set time, while issuing a pause canceling command signal to a VTR 2. After lapse of a pre-set time since the issuance of the pause canceling command signal, as set by a rotary switch 13, the CPU 11 outputs a pause setting command signal to the VTR 2. An infrared LED 14 converts the command signals from the CPU 11 and outputs the converted signals. The editing may be achieved by a simple operation of pressing the edit button switch 12 for facilitating the operation as compared to that with the conventional device.

Inventors: Mori; Akinari (Tokyo, JP), Kondo; Yoshio (Chiba, JP)**Assignee:** Sony Corporation (Tokyo, JP)**Appl. No.:** 08/251,338**Filed:** May 31, 1994**Foreign Application Priority Data**

May 31, 1993 [JP]

5-152863

Current U.S. Class:**386/52 ; 386/E5.069; G9B/27.008****Current International Class:****G11B 27/022 (20060101); G11B 27/028 (20060101); H04N 5/77 (20060101); G11B 27/024 (20060101); H04N 009/79 ()****Field of Search:****360/10.1 358/311,312,335 348/211****References Cited [Referenced By]****U.S. Patent Documents**

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<u>5025324</u>	June 1991	Hashimoto
<u>5055937</u>	October 1991	Yamada et al.
<u>5258875</u>	November 1993	Hashimoto
<u>5282048</u>	January 1994	Bae
<u>5323243</u>	June 1994	Cheon

Primary Examiner: Chin; Tommy P.

Assistant Examiner: Din; Luanne P.

Attorney, Agent or Firm: Maioli; Jay H.

Claims

What is claimed is:

1. An editing device for controlling an editing operation of an editing system having a reproducing unit and a recording unit, comprising:

operating means actuated by a user, for generating pre-set operating signals including an edit operating signal in response to the actuation of said operating means by the user; and

command signal issuing means for detecting said edit operating signal, said command signal issuing means having

means for issuing a rewind playback command signal to said reproducing unit after detection of said edit operating signal by said command signal issuing means, and thereby effecting a rewind operation of said reproducing unit for a first pre-set time interval followed by playback operation of said reproducing unit,

means for issuing a pause cancelling command signal to said recording unit in a recording pause state after detection of said edit operating signal by said command signal issuing means, and thereby effecting cancellation of the recording pause of said recording unit, and

means for issuing a pause setting command signal to said recording unit a second pre-set time interval after issuance of said pause cancelling command signal in response to said detected edit operating signal, and thereby temporarily halting the recording operation of said recording unit.

2. The editing device as claimed in claim 1, further comprising

time setting means for setting said second pre-set time interval.

3. The editing device as claimed in claim 1, wherein said command signal issuing means issues said pause cancelling command signal after the rewind operation of said reproducing unit and before restarting the playback operation of said reproducing unit, playback commencing with signals being reproduced at the time of the actuation of said operating means.

4. The editing device as claimed in claim 1, further comprising:

converting means for converting said rewind playback signal, said pause cancelling command signal and said pause setting command signal into infrared rays.

5. The editing device as claimed in claim 1, further comprising

display means for making a pre-set display indicating the recording operation of said recording unit during a time period between the issuance of said pause cancelling command signal and the issuance of said pause setting command signal.

6. The editing device as claimed in claim 1, further comprising:

second operating means actuated by the user, for generating a playback operating signal in response to the actuation of said second operating means by the user; and

second command signal issuing means for detecting said playback operating signal, and thereafter issuing a playback command signal to said reproducing unit to effect a playback operation of said reproducing unit.

Description

BACKGROUND OF THE INVENTION

This invention relates to an editing device and, more particularly, to an editing device for sequentially editing desired discrete scenes (one-cuts).

In a conventional editing device, the user locates a desired scene or cut as he or she views a reproduced picture, and sets the start position and the end position of the cut for each cut by an extremely laborious operation.

Specifically, a video tape recorder with a built-in camera, referred to herein as a video camera, as a reproducing unit is connected to a video tape recorder, referred to herein as a VTR, as a recording unit, so that playback picture signals from the video camera are supplied to the VTR and to the monitor receiver.

Thus the user retrieves a desired cut to be edited, as he or she views the pictures displayed on the monitor receiver. The user then sets the start position (IN) and the end position (OUT) of the cut on the playback tape on the editing device, using, for example, a so-called time code or a tape counter.

The user then presses the edit button provided on the editing device. The editing device then causes the video camera to rewind the tape to IN and reproduce the playback tape, and subsequently cancels the temporary halt of recording, referred to herein as pause. As a result, recording of the desired cut is started.

When the recording up to "OUT" comes to a close, the editing device controls the pause of the video camera and the VTR. This sets the video camera and the VTR in a pause state to terminate the editing, that is, dubbing, of the desired cut.

When performing the editing of the next cut, it becomes necessary to press the playback button to re-

start the playback of the video camera in order to effect the retrieval of the next desired cut by means of the setting of "IN" and "OUT".

Thus the conventional editing device suffers from the problem of a complicated operating procedure.

SUMMARY OF THE INVENTION

In view of the above-described status of the prior art, it is an object of the present invention to provide an editing device which is superior in operability and which enables the editing time to be reduced as compared to the conventional device.

According to the present invention, there is provided an editing device for controlling an editing operation comprising operating means for generating pre-set operating signals and command signal issuing means for detecting the operating signal and issuing a rewind playback command signal to a reproducing unit for effecting a rewind and playback operation for a pre-set time period. After the issuance of the rewind playback command signal, the command signal issuing means issues a pause canceling command signal to a recording unit which is in the recording pause state for canceling the recording pause state. The command signal issuing means also issues, after lapse of a pre-set time period from the issuance of the pause canceling command signal, a pause setting command signal to the recording unit for temporarily halting the recording by the recording unit.

In one aspect of the present invention, the pre-set time period may be set by time setting means, such as a rotary switch.

With the editing device of the present invention, the user operates operating means for issuing a rewind playback command signal to the reproducing unit for a pre-set time period, while issuing a pause canceling command signal to the recording unit. After lapse of a pre-set time period from the issuance of the pause canceling command signal, a pause setting command signal is issued to the recording unit for recording picture signals for the desired cut from the playback tape of the reproducing unit to the recording tape of the recording unit. The operation may be simplified significantly as compared with that achieved by the conventional device since if the user finds a desired scene for recording as he or she views the playback picture it is only necessary that she pushes the operating means, such as an edit button switch. Furthermore, there is no necessity of setting the recording start position (IN) or the recording end position (OUT) in distinction from the conventional device so that the editing time may be reduced significantly. In addition, the length of the cut may be set to a desired value by the recording time setting means.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram showing an arrangement of an editing system employing an editing device according to the present invention.

FIG. 2 is a block diagram showing a circuit arrangement for the editing device.

FIG. 3 is a flow chart for illustrating the operation of the editing device.

FIG. 4 is a timing chart for command signals output from the editing device.

FIG. 5 is a timing chart showing in tapes loaded the video camera and the VTR making up the editing system, along with the operating state of the video camera and the VTR.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, an embodiment of the present invention will be explained in detail. FIGS. 1 and 2 illustrate the arrangement of the editing system employing the editing device according to the present invention and the circuitry of the editing device, respectively.

The editing system is first explained.

Referring to FIG. 1, the editing system is made up of a video tape recorder with a built-in camera 1, referred to hereinafter as a video camera, a video tape recorder, referred to as a VTR, as a picture recorder for recording playback picture signals from the video camera 1, a monitor receiver 3 for monitoring or viewing a picture reproduced by the video camera, and an editing device 10 for remote controlling the video camera 1 and the VTR 2.

When a desired scene or cut is presented as a playback picture displayed on the monitor receiver 3, the user viewing the displayed picture pushes an editing button switch 12 provided on an operating portion of the editing device 10. This causes various remote control command signals (remote control signals) to be sent from the editing device 10 to the video camera 1 and to the VTR 2, so that the cut is recorded by the VTR 2.

Specifically, the editing device 10 embodying the present invention includes, as shown in FIG. 2, a CPU 11, an editing button switch 12 for actuating the CPU 11, a rotary switch 13, an infrared light-emitting diode (infrared LED) 14, a key matrix switch 15, for remote controlling, for example, the video camera 1, a light emitting diode (LED) for display 16, a battery 17 for supplying the power to, above all, the CPU 11, and an oscillator 18 for generating clock signals. The CPU 11 issues a rewind playback command signal to the video camera 1 for a pre-set time period, and issues a pause canceling command signal to the VTR 2 for canceling a recording pause state. The CPU 11 also issues a pause setting command signal to the VTR 2 for temporarily halting the recording after lapse of a pre-set time period from the issuance of the pause canceling command signal. The rotary switch 13 sets the pre-set time period from the issuance of the pause release command signal supplied by CPU 11 until issuance of the pause setting command signal. The infrared LED 14 issues the command signals from the CPU 11 after conversion into, for example, infrared rays.

The CPU 11 is a so-called one-chip micro-computer provided with, for example, a read-only memory (ROM), a random-access memory (RAM) and an input/output interface (I/O), and is operated in accordance with a flow chart shown, for example, in FIG. 3.

Referring to the flow chart in FIG. 3, the CPU 11 decides, at a step ST1, whether the playback button for the video camera 1 of the key matrix switch 15 has been pressed. If the answer is NO, the CPU 11 proceeds to step ST2. If the answer is YES, the CPU 11 proceeds to a step ST3. At step ST3, the CPU 11 outputs a playback command signal for starting the playback to the video camera 1 in accordance with a format prescribed for the video camera. The CPU 11 then proceeds to a step ST4. The infrared LED 14 converts the playback command signal from the CPU 11 into infrared rays which are transmitted to the video camera 1. The video camera 1 accordingly starts the playback operation.

At the step ST2, the CPU 11 issues command signals, such as for stop, fast feed or the like, in association with the pressed button before reverting to the step ST1. As a result, the video camera 1 performs the stop, fast feed or the like operations.

At the step ST4, the user locates (retrieves) the desired cut, as he or she views the playback picture displayed on the monitor receiver 3, and presses the edit button switch 12. The CPU 11 detects a signal

from the edit button switch 12 at this time and decides whether the user has pressed the edit button switch 12. If the answer is YES, the CPU 11 proceeds to a step ST5. If the answer is NO, the CPU 11 reverts to the step ST1. The technique of initially setting the video camera 1 to the playback state is not limited to the technique at the steps ST1 and ST3. Thus, for example, the playback state may also be set by directly acting on the video camera 1. That is, the key matrix switch 15 need not necessarily be provided on the editing device 10. In such case, the operations of the steps ST1, ST2 and ST3 may be eliminated and the CPU 11 repeats the step ST4 until the edit button switch 12 is pressed.

At the step ST5, the CPU 11 issues the rewind playback command signal (REV signal) for a pre-set time interval, for example, for a time interval $T_{sub.1}$, such as 2 to 3 seconds, from the pressing of the edit button switch 12, as shown in FIG. 4, before proceeding to a step ST6. As a result, the video camera performs rewind playback operations for 2 to 3 seconds.

At the step ST6, the CPU 11 measures the time interval which elapses since the REV signal on the video camera 1 ends until the playback time is stabilized using a timer before proceeding to a step ST7. Specifically, the CPU 11 measures the time interval $T_{sub.2}$ by counting clock signals, as shown in FIG. 4.

At the step ST7, the CPU 11 issues to a VTR 2 a pause canceling command signal that cancels the temporary recording stop (recording pause), as shown in FIG. 4, in accordance with the format as prescribed for the VTR, before proceeding to a step ST8. As a result, the VTR 2 starts its recording operation.

At the step ST8, the CPU 11 measures the pre-set time period as set by the user with the rotary switch 13, that is, the recording time period $T_{sub.3}$, using a timer, as shown in FIG. 4, before proceeding to a step ST9. The time period that can be set by the rotary switch 13 is based on, for example, 5 seconds as a unit, and is up to 45 seconds.

At the step ST9, the CPU 11 issues a recording pause setting signal to the VTR 2 for temporarily halting the recording before reverting to the step ST1.

In this manner, the video signal from a start position 21a of a desired cut up to an end position 21b on a playback tape 21 loaded on the video camera 1 is recorded, that is, dubbed, on a recording tape 22 loaded in the VTR 2. The recording start position 22a may be approximately one second ahead of the start position 21a of the desired cut, as shown, for example, in FIG. 5. During the recording of the desired cut, the LED 16 provided on the operating part may be lighted from the issuance of the pause canceling command signal until issuance of the pause setting command signal in order to apprise the user of the fact that the recording is proceeding.

When the recording comes to an end, the video camera 1 continues in the playback state, while the VTR 2 is in the recording pause state, as indicated in FIG. 5, such that the user is able to retrieve the desired one cut and press again the edit button switch 12 as he or she continues to view; the playback picture. Thus the operation may be simplified significantly as compared with that of the conventional device. There is also no necessity of setting the recording start position (IN) or the recording end position (OUT) as required with the conventional device, so that the editing time may be reduced significantly. In addition, the length of the one cut may be set by the rotary switch 13 to, for example, 5 seconds, to facilitate viewing of the cut.

Furthermore, the editing device 10 is simpler in circuit construction, as shown in FIG. 2, while being small-sized, lightweight, and lower in cost than the conventional device. In addition, the device consumes less power and may be operated by a battery.

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